

COMMENTS

Opening Comments

The enclosed is responsive to the Examiner's Final Office Action mailed on July 2, 2002. At the time the Examiner mailed the Final Office Action, claims 1, 2, 4 -38 and 40-83 were pending. In response, the Applicant has added additional claims 84 through 98; and, has filed herewith a Request for Continued Examination (RCE) as provided under 37 CFR 1.114. The Applicant respectfully requests reconsideration of the present application and the allowance of claims 1, 2, 4 -38, 40-83 and 84-98.

Claims 1,2, 4-38 and 40-83 stand rejected as being unpatentable under 35 USC 112, paragraph 1 as containing subject matter which was not disclosed in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention. More specifically, the Examiner appears to have reached the following set of conclusions:

1) the claim element "a bit per word programmable parameter and a word per cell programmable parameter" as found in independent Claims 1, 34 and 42 is not supported by the Applicant's specification.

2) the claims elements "a programmable bit per word size" and "a programmable word per ... cell size" as found in independent claim 50 are not supported by the Applicant's specification.

3) the claims elements “a bit per word size parameter” and “a word per ... cell size parameter” as found in independent claim 69 are not supported by the Applicant’s specification.

The Applicant respectfully disagrees with the Examiner’s position.

In reaching his conclusions, the Examiner held that the subject matter “the bits per word and the words per cell [being] programmable parameters” is “not taught in the disclosure as originally filed.” See, Examiner’s Office Action page 2. However, immediately following this conclusion, and in an effort to support this conclusion, the Examiner provides a self-contradictory statement that “page 31, lines 10-12 [of the Applicant’s specification] teaches that the word size and the cell size are programmable parameters.” See, Examiner’s Office Action page 2. The Applicant is somewhat confused by the Examiner’s analysis because it appears that the pattern of words used by the Examiner to define the impermissibly claimed subject matter (“the bits per word and the words per cell are programmable parameters”) accurately describe the teachings of the Applicant’s specification as described by the Examiner himself (“the word size and the cell size are programmable parameters”).

From the Applicant’s perspective, the only possible resolution to this inconsistency is that the Examiner is impliedly holding that there is a difference between: 1) the phrase “the bits per word” and the phrase “the word size”; and, 2) the

phrase “the words per cell” and the phrase “the cell size”. In response to this apparent reasoning, the Applicant respectfully submits the following arguments.

Support Exists In The Specification For the Claims As They Stand

Firstly, the Examiner’s attention is drawn to page 30, line 27 through page 31, line 3 of the Applicant’s specification where it is stated that

“[p]rogrammable parameters are used to customize the FIFO 2900, wherein the cell size, or number of words per cell, and the word size, or number of bits per word, are both programmable, or parameterized.” (emphasis added).

Here, use of the conjunctive term “or” describes the invention in a conversationalist tone which clearly and successfully conveys the notion that: 1) the phrase “cell size” is synonymous with the phrase “number of words per cell”; 2) the phrase “word size” is synonymous with the phrase “number of bits per word”; and, 3) both the “cell size” and the “word size” are separately programmable parameters. Therefore there exists within the present application a precise sentence that perfectly counter argues any theory of rejection that is based upon there being a difference between: 1) the phrase “the bits per word” and the phrase “the word size”; and, 2) the phrase “the words per cell” and the phrase “the cell size”.

The Examiner’s attention is moreover drawn to page 31, lines 4-6 of the Applicant’s specification where it is stated that

“figure 31 lists the input/outputs (I/Os) and a corresponding interface description for the bi-directional FIFOs of the CBC of one embodiment.”

Turning to Figure 31 of the Applicant's specification, note that the parameter listing that is provided therein includes a “num_bits_in_fifo_word” parameter and a “num_words_in_cell” parameter. Turning now to page 32, lines 8-11 of the Applicant's specification note that it is stated

“figure 32 is a flowchart for controlling cell traffic in a switch platform. Operation begins at step 3202, at which a cell size of each of a first and second unidirectional FIFO buffers is programmed. A word size of each of the first and second unidirectional FIFO buffers is programmed, at step 3206.”

Taking the above cited references to Figures 31 and 32 together, it is clear that the programming of the cell size 3202 of Figure 32 corresponds to the setting of the “num_words_in_cell” parameter of Figure 31; and, the programming of the word size 3206 of Figure 32 corresponds to the setting of the “num_bits_in_fifo_word” parameter of Figure 31. As such, the term “cell size” is synonymous with the phrase “the number of words per cell” and the term “word size” is synonymous with the phrase “the number of bits in a FIFO word”.

Even If Support Did Not Expressly Exist In The Specification - None Would Be Needed

Moreover, even if the above cited portions of the application did not exist, it would be clearly unreasonable for the Examiner to develop a theory of rejection based upon there being a difference between the phrase “the bits per word” and the phrase “the word size” or, there being a difference between the phrase “the words per cell” and the phrase “the cell size”. Each of these are addressed in detail immediately below.

Firstly, the terms “word size” and “bits per word” are ubiquitously used interchangeably by those of ordinary skill. That is, it is deep within the mindset of those of ordinary skill that a “word” is “a plurality of bits”. As such, it is perfectly acceptable to define a “word size” as a “number of bits per word”. The Applicant therefore submits that, in light of these well known principles, it would be plainly unreasonable for the Examiner to conclude that there is a difference between the phrase “the bits per word” and the phrase “the word size” - even if the portions of the Applicant’s specification that were cited in the preceding section did not exist.

Secondly, along a similar train of thought with respect to the Examiner’s apparent reasoning that there is a difference between the phrase “the words per cell” and the phrase “the cell size”, the Applicant respectfully submits that it is readily apparent to those of ordinary skill that the size of a cell can be defined in any of a number of different ways; and that, it is well within the reach and understanding of those of ordinary skill to determine which manner of definition is being applied for any pattern of words (whether they appear in the claims or in the specification). If the

Examiner is therefore seizing upon a first definition approach as a basis for rejecting claim wording based upon a second definitional approach, such reasoning is clearly impermissible because those of ordinary skill would have no difficulty determining which approach applied; and, as a result, would be able to easily grasp the meanings and concept(s) being conveyed by the Applicant's claims. This is made evident by the following example.

A first approach is to define the size of a cell in terms of the "number of words per cell" for a fixed "number of bits per word". For example, if the number of bits per word is 32 and a cell is configured to be coextensive with 448 bits of information - then, the cell size can be properly stated as 14 words (because, $32 \times 14 = 448$). A second approach, is to define a cell size simply in terms of the number of bits per cell. As such, a second way to define the size of the cell described above is 448 bits. Here, although a cell size can be described in its finest level of detail in terms of the number of bits per cell (e.g., 448 bits); nevertheless, for a fixed number of bits per word (e.g., 32), the same cell can be perfectly and accurately described in terms of its number of words (e.g., 14 words). The distinction is perfectly analogous to a distance that is defined as being either of "thirty six inches" or "three feet". Neither approach is any more clearer or more precise than its alternative. As such, it is perfectly permissible for the Applicant to select a choice of wording in any claim section that corresponds to either of these approaches.

It is error therefore for the Examiner to find that "the words per cell" can not be the same as "the cell size" under the reasoning that this definition "is not taught in the

disclosure as originally filed". Not only has this subject matter been clearly defined within the Applicant's specification; but also, even if it had not been so defined - such definition would not be needed.

It Is Possible To Have A Programmable "Words Per Cell Size" Parameter That Is Directed To A Mode Having A Specific Number Of Bits Per Cell.

The imperfections of the Examiner's reasoning are made even more clear when the Examiner's additional comments are also analyzed. Here, in order to further support his reasoning that "the bits per word and the words per cell [being] programmable parameters" are "not taught in the disclosure as originally filed," the Examiner further explained that "cell size could be set equal to the word size; in this case, the word size and the cell size could be programmable, but the words per cell would not be a programmable parameter." Examiner's Office Action, Page 2, paragraph 2 the Applicant does not fully understand what the Examiner is trying to say. To first order, the Examiner's first pair of statements that "the cell size could be set equal to the word size" and "in this case, the word size and the cell size could be programmable" makes sense.

For example, if the cell size were programmed to be equal to 16 words per cell; and if the word size were programmed to be equal to 16 bits per word; then, the resultant cell would have a size of 256 bits (because $16 \times 16 = 256$). In this case, both the "cell size" parameter would be programmed to a value of 16 and the "word size" parameter would be programmed to a value of 16. As such, embodiments can be

envisioned where the cell size parameter is programmed to be the same number that word size parameter is programmed to be. The Examiner's concluding statement "but the words per cell would not be a programmable parameter", however, is illogical. Firstly, the Examiner appears to be drawing a faulty distinction between the phrase "cell size" and "words per cell"; where, the Applicant has made plain the error in such reasoning in the preceding sections. Secondly, as described by the example itself, the "cell size" as defined by the "number of words per cell" is, in fact, a programmable parameter.

To the extent the Examiner may be trying to say that it is "impossible to have a programmable words per cell parameter when a specific number of bits per cell is employed" - in the sense that one can not have a variable quantity (words per cell) if it refers to a fixed quantity (cell size) - the Applicant respectfully disagrees with the Examiner's logic. Perhaps the Examiner is unaware that the teachings of the Applicant's specification can be directed to a circuit design that embraces a pair of modes where a different cell size (e.g., as defined in terms of either bits per cell or words per cell) is employed as between the pair of modes. For example, note page 15, lines 20-21; page 15, line 24; and page 16, lines 4-5 of the Applicant's specification: "The [Cell Bus Controller (CBC)] of one embodiment supports two modes, a QE mode and an ATM mode; "Figure 8 is a cell format of the QE mode of one embodiment."; "Figure 9 is a cell format of the ATM mode of one embodiment."

Turning to Figures 8 and 9 of the Applicant's drawings, Figure 8 (the QE mode) shows 26 words each having 16 bits per word; and, Figure 9 (the ATM mode) shows 56

words each of 8 bits per word. Regardless as to whether or not the “words” as observed in Figures 8 and 9 are the same size as the words that are formed when a cell is stored in the bi-directional queue, note that the QE mode embraces a cell size of 416 bits (because $26 \times 16 = 416$) while the ATM mode embraces a cell size of 448 bits (because $56 \times 8 = 448$). As such, it is clear that the cell size is not a permanently fixed parameter; but, in fact, is a parameter that can be varied depending on the mode that is desired. That is, a first cell size/words-per-cell value can be programmed if a first mode is desired (e.g., QE mode); and, a second cell size/words-per-cell value can be programmed if a second mode is desired (e.g., ATM mode).

From this perspective, the cell size/words-per-cell value is not a “fixed” value as between modes even though it is a “fixed” value once a specific mode has been completely configured and is operational. It is this variability to which the programmable nature of the bi-directional queue is directed; and, as such, may be acceptably regarded as claimable subject matter. Therefore, to the extent the Examiner may be reasoning that the “words per cell” cannot be a programmable parameter because one can not have a variable quantity if it refers to a fixed quantity, in light of these comments, such reasoning is clearly mis-directed.

Conclusory Remarks

For the foregoing reasons, the Applicant respectfully submits that it is error to hold that the “the bits per word and the words per cell [being] programmable parameters” is “not taught in the disclosure as originally filed.” As such, each of claims

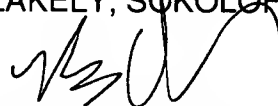
1, 2, 4 -38 and 40-83 are presently in allowable form. The Applicant also respectfully requests the entry of new claims 84-98. As such, the Applicant respectfully requests reconsideration of the present application and the allowance of claims 1,2, 4 -38, 40-83 and 84-98.

If there are any additional charges, please charge them to our Deposit Account Number 02-2666. If a telephone conference would facilitate the prosecution of this application, the Examiner is invited to contact Robert B. O'Rourke at (408) 720-8300.

Respectfully submitted,

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